

ABSTRACT

A liquid crystal display (LCD) device having non-white and white light emitting diodes and a liquid crystal display. A spectrum converting material is positioned between non-white LEDs and the LCD to convert the non-white light from the LEDs toward a white light spectrum. The liquid crystal display may include a plurality of light emitting diodes, a light pipe, and a spectrum converting material. The spectrum converting material may be a phosphorized material located between the plurality of non-white light emitting diodes and the light pipe. A light extracting surface may be located near a first surface of the light pipe, a diffuser located near a second side of the light pipe, where the first and second sides are opposite sides of the light pipe, a reflective polarizer, and an liquid crystal display. The light from the light pipe may pass through the diffuser, the reflective polarizer, before backlighting the liquid crystal display. The non-white LEDs may include blue LED, ultraviolet LEDs, and the like.